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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,681

08/25/2006

Dieter Grafl

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MARSHALL & MELHORN, LLC
FOUR SEAGATE
8TH FLOOR
TOLEDO, OH 43804

EXAMINER

SIDDIQUEE, MUHAMMAD S

ART UNIT

PAPER NUMBER

1726

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,681	Applicant(s) GRAFL ET AL.	
	Examiner MUHAMMAD SIDDIQUEE	Art Unit 1726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-30 is/are pending in the application.
- 4a) Of the above claim(s) 27-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 2-3, filed 8/27/2010, with respect to the rejection(s) of claim(s) 12-21 under 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of *newly found prior art reference(s)*.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a

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nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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5. Claims 12-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al (US 6,383,678) in view of Iino et al (US 2007/0178349 A1).

Regarding claims 12-15, Kaneko discloses a separator (20, 120, 220) (contact plate) for fuel cells comprising a projections (coherent active area) on the contact plate which contacts fuel cell electrodes. The active area includes a contact surface and recesses which form a channel structure. The separator is made of stainless steel (passivating, corrosion-resistant metal) and includes a coating (23, 123, (223+228)) of an electrically conductive, corrosion resistant material comprising carbon and resin (thermoplastic or thermoset) [Abstract; Fig. 1-2, 7, 10; column 4, lines 1-39, column 6, lines 1-37, column 8, lines 33-55]. Kaneko does not teach that the coating material is only on the contact surface. However, Iino discloses a fuel cell separator comprising a low-elastic modulus layer (1) over a high-elastic modulus layer (2). Iino also teaches that low-elastic modulus layer (1) comprises electroconductive resin composite material comprising a resin binder, such as a thermoplastic or thermosetting resin and an electroconductive substance such as carbon. Iino further teaches that low-elastic modulus layer (1) can be only on the contact surface [Fig. 1-3; paragraph 0026, 0030, 0033-0034, 0041, 0070, 0081, 0103-0105]. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the teachings of applying coating layer only on the contact surface as taught by Iino in the fuel cell of Kaneko in order to avoid large quantity of material and high manufacturing costs. Also, utilization of both binder and carbon on the contact surface reduce the contact resistance.

Regarding claims 16-18, Kaneko teaches that the contact plate further includes an edge region which is outside of the active area [Fig. 2, 9].

Regarding claim 19, Kaneko teaches that the carbon can be in the form of graphite [column 5, lines 9-16, column 1, lines 14-24].

Regarding claims 20-21, Kaneko teaches that the conductive coating membrane comprises carbon, a precious metal, or an alloy of nickel and chromium [Abstract].

Regarding claims 22-23, lino teaches that the separator (contact plate) has the thickness of 0.2mm to 3mm [paragraph 0031-0032, 0050-0051, 0074-0078].

6. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al (US 6,383,678) in view of lino et al (US 2007/0178349 A1) as applied in claim 12 and further in view of Ganski et al (US 2003/0194597 A1).

Regarding claims 24-26, Kaneko/lino remains silent about using the contact plate as bipolar plate. However, Ganski teaches that contact plates are used as bipolar plates and end plates [paragraph 0008, claim 27, 37]. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the teachings of using same contact plates for bipolar plates and end plates as taught by Ganski in the fuel cell of Kaneko/lino in order to use same parts for different functions and thereby efficient manufacturing process.

7. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al (US 6,383,678) in view of Fronk et al (US 6,372,376).

Regarding claims 12-15, Fronk discloses an electrical contact element for fuel cells comprising a stainless steel substrate coated with an electrically conductive, corrosion-resistant polymer containing a plurality of electrically conductive, corrosion-resistant filler particles [Abstract]. Fronk does not teach that the coating material is only on the contact surface. However, Iino discloses a fuel cell separator comprising a low-elastic modulus layer (1) over a high-elastic modulus layer (2). Iino also teaches that low-elastic modulus layer (1) comprises electroconductive resin composite material comprising a resin binder, such as a thermoplastic or thermosetting resin and an electroconductive substance such as carbon. Iino further teaches that low-elastic modulus layer (1) can be only on the contact surface [Fig. 1-3; paragraph 0026, 0030, 0033-0034, 0041, 0070, 0081, 0103-0105]. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the teachings of applying coating layer only on the contact surface as taught by Iino in the fuel cell of Kaneko in order to avoid large quantity of material and high manufacturing costs. Also, utilization of both binder and carbon on the contact surface reduce the contact resistance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MUHAMMAD SIDDIQUEE whose telephone number is (571) 270-3719. The examiner can normally be reached on Monday-Thursday, 7:30 am to 4:00 pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Muhammad Siddiquee/
Examiner, Art Unit 1726

/Patrick Joseph Ryan/
Supervisory Patent Examiner, Art Unit 1726